MTE

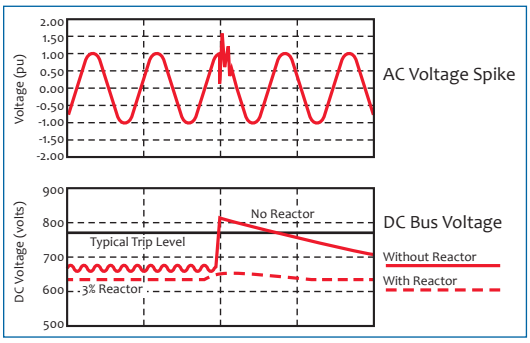
AN SL POWER ELECTRONICS COMPANY

RL Line/Load Reactors

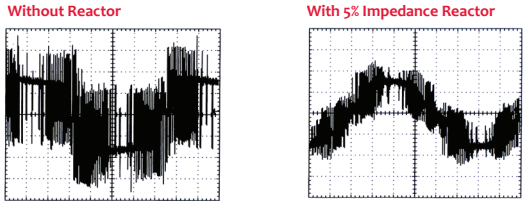
Selection Table, Technical Details & Product Application Guide

MTE HARMONIC COMPENSATED LINE/LOAD REACTORS help keep your equipment running longer by absorbing many of the power line disturbances which otherwise damage or shut down your inverters, variable frequency drives (VFDs), variable speed controllers, or other sensitive equipment. They are a robust filtering solution for virtually any 6 pulse rectifier or power conversion unit. There is no need to de-rate MTE Reactors as they are harmonic compensated and IGBT protected to assure optimum performance in the presence of harmonics, and are very effective at reducing harmonics produced by inverters and drives. Standard MTE Reactors may be applied up to 690 VAC with compatible impedance ratings. MTE RL Reactors have higher continuous and overload ratings.

VOLTAGE SPIKE PROTECTION - Voltage spikes on the AC power lines cause rapid elevation of the DC Bus voltage which may cause the inverter to "trip-off" and indicate an over-voltage protection condition. RL Reactors absorb these line spikes and offer protection to the rectifiers and DC Bus capacitors while minimizing nuisance tripping of the inverter. A 3% impedance RL Reactor is 90% effective at protecting against transients or nuisance tripping of AC voltage source inverters due to voltage spikes. The 5% RL Reactor extends spike protection to 99%.



MOTOR PROTECTION - MTE RL Reactors help to protect motors and cables from the high peak voltages and fast rise times (dV/dt) which can be experienced in IGBT inverter applications when the distance between the inverter and motor is up to 300 feet. For guaranteed long lead protection up to 1000 feet use the MTE **dV/dt Filter** or the MTE **Sine Wave Filter** as the ultimate in motor and wire protection.



HARMONICS:

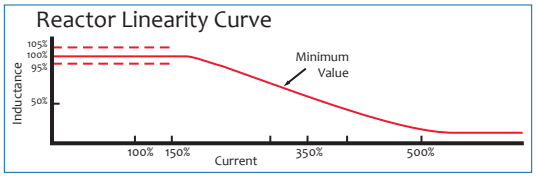
Drive Harmonic currents will be reduced by adding an input line reactor.

3% impedance reactor yields 35-55% THID

5% impedance reactor yields 25-45% THID

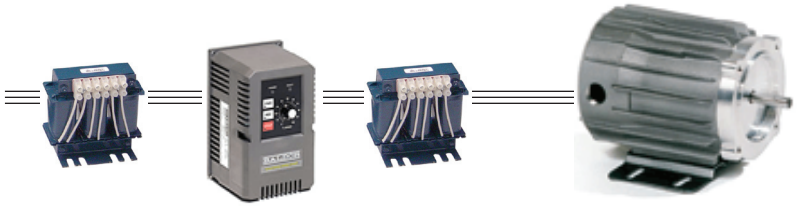
Note: for guaranteed compliance to IEEE519 (5% THID) use a MTE Matrix Series D Filter

REACTOR LOADED PERFORMANCE: The curve to the right illustrates the linearity of MTE RL Reactors. Even at 150% of their rated current, these reactors still have 100% of their nominal inductance. This assures maximum filtering of distortion even in the presence of severe harmonics and the best absorption of surges. The typical tolerance on rated inductance is plus-or-minus 10%.



Typical uses include:

- Protect Motors from Long Lead Effects
- Reduce Output Voltage dV/dt
- Virtually Eliminate Nuisance Tripping
- Extend Semiconductor Life
- Reduce Harmonic Distortion
- Reduce Motor Temperature
- Reduce Motor Audible Noise



For three phase applications you can use the same MTE catalog part number to protect both line and load side of a VFD.

MTE RL Reactor Selection Tables

THE GLOBAL POWER QUALITY RESOURCE

MTE Corporation - Menomonee Falls, WI - 1-800-455-4MTE - www.mtecorp.com

Selection Table 208-690 VAC Three-Phase and Single-Phase Applications

	Input Voltage	% Impedance	0.25hp 0.18kw	0.33hp 0.25kw	0.5hp 0.37kw	0.75hp 0.55kw	1hp 0.75kw	1.5hp 1.1kw	2hp 1.5kw	3hp 2.2kw	5hp 3.7kw	7.5hp 5.5kw	10hp 7.5kw	15hp 11kw	20hp 15kw	25hp 18.5kw
Three Phase input or output applications selected by Motor	208 vac 60Hz	3%	RL-00204	RL-00204	RL-00401	RL-00401	RL-00802	RL-00801	RL-01201	RL-01801	RL-02501	RL-03501	RL-04501	RL-05501	RL-08001	RL-10001
		5%	RL-00201	RL-00201	RL-00402	RL-00803	RL-00802	RL-00802	RL-01202	RL-01802	RL-02502	RL-03502	RL-05502	RL-08002	RL-10002	RL-08001
	240 vac 60Hz	3%	RL-00201	RL-00204	RL-00204	RL-00401	RL-00401	RL-00801	RL-00801	RL-01201	RL-01801	RL-02501	RL-03501	RL-04501	RL-08001	RL-10001
		5%	RL-00202	RL-00201	RL-00403	RL-00402	RL-00803	RL-00802	RL-00802	RL-01202	RL-01802	RL-03502	RL-03502	RL-05502	RL-08002	RL-10002
	400 vac 50Hz	3%	RL-00103	RL-00103	RL-00202	RL-00202	RL-00201	RL-00403	RL-00402	RL-00803	RL-01202	RL-01202	RL-01802	RL-02502	RL-03502	RL-04502
		5%	RL-00102	RL-00102	RL-00203	RL-00203	RL-00202	RL-00404	RL-00404	RL-00804	RL-01203	RL-01203	RL-01803	RL-02503	RL-03503	RL-04503
	480 vac 60Hz	3%	RL-00103	RL-00103	RL-00104	RL-00201	RL-00201	RL-00402	RL-00402	RL-00803	RL-00802	RL-01202	RL-01802	RL-02502	RL-03502	RL-03502
		5%	RL-00102	RL-00102	RL-00103	RL-00202	RL-00202	RL-00404	RL-00404	RL-00804	RL-00803	RL-01203	RL-01803	RL-02503	RL-03503	RL-03503
	600 vac 60Hz	3%	RL-00102	RL-00102	RL-00103	RL-00202	RL-00202	RL-00201	RL-00403	RL-00402	RL-00803	RL-01202	RL-01202	RL-01802	RL-02502	RL-02502
		4%	RL-00101	RL-00101	RL-00102	RL-00203	RL-00203	RL-00202	RL-00404	RL-00404	RL-00804	RL-01203	RL-01203	RL-01803	RL-02503	RL-02503
	690 vac 50Hz	2%								RL-00403	RL-00402	RL-00801	RL-01202	RL-01202	RL-01802	RL-02502
		3%								RL-00402	RL-00404	RL-00804	RL-01203	RL-01203	RL-01803	RL-02503
Single Phase input Applications	Use outer two windings															
	120 vac 60Hz	5%	RL-00801	RL-001201	RL-01801	RL-02501	RL-02501	RL-03503	RL-03501	RL-05501	RL-10001	RL-13001	RL-13001			
	208 vac 60Hz	5%	RL-00401	RL-00401	RL-00401	RL-01202	RL-00801	RL-01201	RL-02502	RL-03502	RL-03501	RL-04501	RL-05501	RL-08001	RL-13001	RL-13001
	240 vac 60Hz	5%	RL-00402	RL-00401	RL-00803	RL-00802	RL-01202	RL-01201	RL-01201	RL-01801	RL-04502	RL-08002	RL-08002	RL-08001	RL-10001	RL-16002
	240 vac 50Hz	5%	RL-hp	RL-00402	RL-00402	RL-00802	RL-00802	RL-01802	RL-01802	RL-02502	RL-03502	RL-05502	RL-08002	RL-10002	RL-13002	RL-16002
	400 vac 50Hz	5%	RL-00103	RL-00202	RL-00201	RL-00201	RL-00403	RL-00402	RL-00803	RL-01203	RL-01803	RL-02503	RL-03503	RL-04502	RL-05502	RL-08002
	480 vac 60Hz	5%	RL-00202	RL-00202	RL-00202	RL-00404	RL-00403	RL-00402	RL-00803	RL-01203	RL-01803	RL-02503	RL-02502	RL-05503	RL-08003	RL-08003
	600 vac 60 Hz	5%			RL-00202	RL-00202	RL-00404	RL-00403	RL-00403	RL-00803	RL-01203	RL-01803	RL-02503	RL-03503	RL-04503	RL-05503

For detailed product specifications refer to the RL User Manual or RL Reference Sheet.

This table is suitable for selection of both input & output 3-phase reactors because their harmonic compensation & conservative design allow them to be used in either application. Specific current & inductance ratings are indicated on Pages 4 & 5. Consult factory for any special applications (higher current, motor rating different than controller rating, etc).

Select RL line/load reactors based upon motor horsepower (or kilowatts) and voltage. Verify that the motor full load ampere name plate rating is within the RMS current rating of the reactor, & the drive/inverter rating is within the maximum continuous current rating of the reactor

Agency Approvals:

MTE RL Reactors are manufactured to the exacting standards of MIL-I-45208, VDE-0550, & are UL Listed and CSA certified. All UL approvals are for USA & Canada.

- **CSA File #LR29753-13, open units up to 2400A**
- **UL-508 File #E180243, open and enclosed up to 2400A**

NEMA Cabinets:

RL reactors are available as either open type or in a NEMA Type 1 general purpose enclosure or NEMA type 3R weather. To order a reactor mounted in a cabinet simply change the second last digit of the part number from "0" to "1" (NEMA1) or "3" for (NEMA 3R) Cabinets.
Example: RL-00802 enclosed becomes RL-00812.

Impedance Rating:

3% impedance reactors are typically sufficient to absorb power line spikes and motor current surges. They will prevent nuisance tripping of drives or circuit breakers in most applications.

5% impedance reactors are best for reducing harmonic currents and frequencies. Use them when you must reduce VFD drive generated harmonics, and to reduce motor operating temperature, or to reduce motor noise.

$$\%_{impedance} = \frac{I_{RMS} \times 2\pi F_{50/60Hz} \times L_{RLinductance} \times \sqrt{3}}{V_{L\text{-}L}} \times 100$$

Note: The effective impedance of the reactor changes with actual RMS current through the reactor as seen in the above equation.

A 5% impedance reactor becomes 3% if its current is reduced to 60%.

Selection Table 208-690 VAC Three-Phase and Single-Phase Applications ... *Continued*

30hp *22kw*	40hp *30kw*	50hp *37.5kw*	60hp *45kw*	75hp *55kw*	100hp *75kw*	125hp *93kw*	150hp *112kw*	200hp *150kw*	250hp *187kw*	300hp *225kw*	350hp *262kw*	400hp *300kw*	500hp *375kw*	600hp *450kw*	700hp *550kw*	800hp *600kw*
RL-13001	RL-13001	RL-16001	RL-20001B14	RL-25001B14	RL-32001B14	RL-50001B14	RL-50001B14	RL-60001	RL-75001	RL-85001B14	RL-100001B14	RL-120001B14	RL-40001			
RL-10001	RL-13001	RL-16001	RL-20002B14	RL-25002B14	RL-32001B14	RL-50002	RL-60002	RL-60001	RL-75002	RL-85001B14	RL-100002B14	RL-120002B14	RL-40001			
RL-10001	RL-13001	RL-13001	RL-16001	RL-20001B14	RL-25001B14	RL-32001B14	RL-40001B14	RL-50001B14	RL-60001	RL-75001	RL-85001B14	RL-100001B14	RL-120001B14			
RL-10002	RL-13002	RL-13001	RL-16002	RL-20002B14	RL-25002B14	RL-32002B14	RL-40002B14	RL-50002	RL-60002	RL-75002	RL-85002B14	RL-100002B14	RL-120002B14			
RL-04502	RL-05502	RL-08002	RL-10002	RL-13002	RL-16002	RL-20002B14	RL-25002B14	RL-32002B14	RL-40002B14	RL-40002B14	RL-50002	RL-60002	RL-75002	RL-90002B14	RL-100002B14	RL-120002B14
RL-04503	RL-05503	RL-08003	RL-10003	RL-13003	RL-16003	RL-20003B14	RL-25003B14	RL-32003B14	RL-40003B14	RL-40003B14	RL-50003	RL-60003	RL-75003	RL-90003B14	RL-100003B14	RL-120003B14
RL-04502	RL-05502	RL-08002	RL-08002	RL-10002	RL-13002	RL-16002	RL-20002B14	RL-25002B14	RL-32002B14	RL-40002B14	RL-50002	RL-50002	RL-60002	RL-75002	RL-85002B14	RL-100002B14
RL-04503	RL-05503	RL-08003	RL-08003	RL-10003	RL-13003	RL-16003	RL-20003B14	RL-25003B14	RL-32003B14	RL-40003B14	RL-50003	RL-50003	RL-60003	RL-75003	RL-85003B14	RL-100003B14
RL-03502	RL-04502	RL-05502	RL-08002	RL-08002	RL-10002	RL-13002	RL-16002	RL-20002B14	RL-25002B14	RL-32002B14	RL-40002B14	RL-40002B14	RL-50002	RL-60002	RL-75002	RL-85002B14
RL-03503	RL-04503	RL-05503	RL-08003	RL-08003	RL-10003	RL-13003	RL-16003	RL-20003B14	RL-25003B14	RL-32003B14	RL-40003B14	RL-40003B14	RL-50003	RL-60003	RL-75003	RL-85003B14
RL-02502	RL-02501	RL-03501	RL-04502	RL-05502	RL-08002	RL-08002	RL-10002	RL-13002	RL-13002	RL-16002	RL-20002B14	RL-25002B14	RL-32002B14	RL-40002B14	RL-40002B14	RL-RL-50002
RL-02503	RL-02503	RL-03503	RL-04503	RL-05503	RL-08003	RL-08002	RL-10003	RL-13003	RL-13003	RL-16003	RL-20003B14	RL-25003B14	RL-32003B14	RL-40003B14	RL-40003B14	RL-RL-50003
Use outer two windings																
RL-16001	*RL-20001B14*	*RL-25001B14*	*RL-32001B14*	*RL-40001B14*	*RL-50001B14*											
RL-20002B14	*RL-25002B14*	*RL-32002B14*	*RL-40002B14*	*RL-50002*	*RL-60002*											
RL-16002	*RL-20002B14*	*RL-25002B14*	*RL-32002B14*	*RL-40002B14*	*RL-75003*											
RL-08002	*RL-10002*	*RL-13003*	*RL-16003*	*RL-20003B14*	*RL-25003B14*											
RL-08003	*RL-10002*	*RL-13003*	*RL-16003*	*RL-20003B14*	*RL-25003B14*	*RL-32003B14*	*RL-40003B14*	*RL-50003*								
RL-08003	*RL-08002*	*RL-10003*	*RL-13003*	*RL-16003*	*RL-20003B14*	*RL-25003B14*	*RL-25003B14*	*RL-40003B14*								

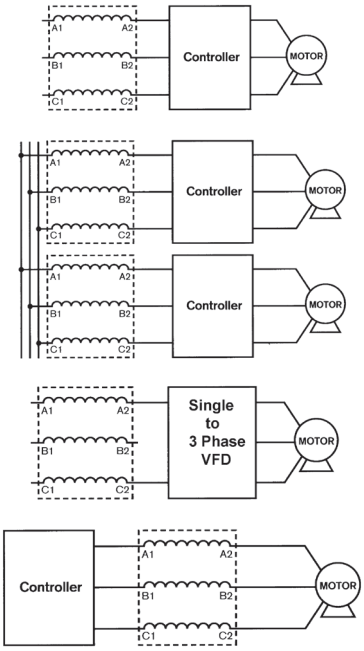
Standard Application of RL Line/Load Reactors:

On the input of motor VFD controller or six-pulse nonlinear load, RL Reactors protect sensitive electronic equipment from electrical noise created by the drive or inverter (notching, pulsed distortion or harmonics). RL Reactors protect the controller from surges or spikes on the incoming power lines and reduce harmonic distortion. They help to reduce VFD produced non-linear current harmonics that may cause voltage distortion and effect other devices powered from the same AC mains.

Multiple drives or inverters on a common power line require one reactor per controller. Individual reactors provide filtering between each controller (reducing crosstalk) and also provide optimum surge protection for each unit. A single reactor serving several controllers does not provide adequate protection, filtering or harmonic reduction when the system is partially loaded.

Single Phase input configured drives can be protected from spikes and transient voltage by using standard 3-phase RL Line/Load Reactors for 1- phase applications by routing each of the two supply conductors through an outside coil and leaving the center open. Application Note **AN0102** details this use. Note that the single drive input current is √3 (SQRT 3) times the 3-phase motor values. The above table may be used to select a reactor for 1-phase input applications.

In extended motor lead applications up to 300 feet use RL Reactors between the inverter & motor to reduce dV/dT & motor terminal peak voltage. The use of a separate load reactor also protects the controller from surge current caused by a rapid change in the load, & even from a short circuit at the load. MTE Reactors also reduce operating temperature & audible noise in motor loads. For a guaranteed long lead solution up to 1000 feet use the **MTE Series A dV/dT Filter**. More than one motor on a single drive presents a complex load not suited to reactor protection. Use an **MTE Series A Sine Wave Filter** when there is a need to protect more than one motor or for single motor distances to 15,000 feet.



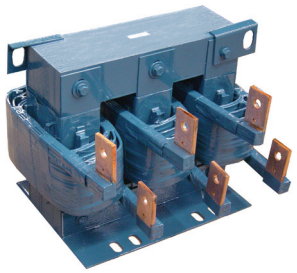
Selection Table RL Line/Load Reactor Technical Data

Open Part	amps	Inductance mH	Watts	Size inches	*Size mm*	Open Weight	Cabinet
RL-00101	1	100	13.5	3.5 in H x 3.8 in W x 1.2 in D	*89 mm H x 97 mm W x 30 mm D*	2.2# 1Kg	CAB-8
RL-00102	1	50	12.8	3.5 in H x 3.8 in W x 1.2 in D	*89 mm H x 97 mm W x 30 mm D*	2.1# 1Kg	CAB-8
RL-00103	1	36	11.9	3.5 in H x 3.8 in W x 1.2 in D	*89 mm H x 97 mm W x 30 mm D*	2.1# 1Kg	CAB-8
RL-00104	1	18	9.6	3.5 in H x 3.8 in W x 1.2 in D	*89 mm H x 97 mm W x 30 mm D*	2# 0.9Kg	CAB-8
RL-00201	2	12	7.5	4.1 in H x 4.4 in W x 2.8 in D	*104 mm H x 112 mm W x 71 mm D*	4# 1.8Kg	CAB-8
RL-00202	2	20	11.3	4.1 in H x 4.4 in W x 2.8 in D	*104 mm H x 112 mm W x 71 mm D*	4# 1.8Kg	CAB-8
RL-00203	2	32	16	4.1 in H x 4.4 in W x 2.8 in D	*104 mm H x 112 mm W x 71 mm D*	4# 1.8Kg	CAB-8
RL-00204	2	6	10.7	4.1 in H x 4.4 in W x 2.5 in D	*104 mm H x 112 mm W x 64 mm D*	3# 1.4Kg	CAB-8
RL-00401	4	3	14.5	4.1 in H x 4.4 in W x 2.8 in D	*104 mm H x 112 mm W x 71 mm D*	4# 1.8Kg	CAB-8
RL-00402	4	6.5	20	4.1 in H x 4.4 in W x 2.8 in D	*104 mm H x 112 mm W x 71 mm D*	4# 1.8Kg	CAB-8
RL-00403	4	9	20	4.1 in H x 4.4 in W x 3.4 in D	*104 mm H x 112 mm W x 86 mm D*	5# 2.3Kg	CAB-8
RL-00404	4	12	21	4.1 in H x 4.4 in W x 3.4 in D	*104 mm H x 112 mm W x 86 mm D*	6# 2.7Kg	CAB-8
RL-00801	8	1.5	19.5	4.8 in H x 6 in W x 3 in D	*122 mm H x 152 mm W x 76 mm D*	7# 3.2Kg	CAB-8
RL-00802	8	3	29	4.8 in H x 6 in W x 3 in D	*122 mm H x 152 mm W x 76 mm D*	8# 3.6Kg	CAB-8
RL-00803	8	5	25.3	4.8 in H x 6 in W x 3.4 in D	*122 mm H x 152 mm W x 86 mm D*	11# 5Kg	CAB-8
RL-00804	8	7.5	28	4.8 in H x 6 in W x 3.4 in D	*122 mm H x 152 mm W x 86 mm D*	13# 5.9Kg	CAB-8
RL-01201	12	1.25	26	5 in H x 6 in W x 3.3 in D	*127 mm H x 152 mm W x 84 mm D*	9# 4.1Kg	CAB-8
RL-01202	12	2.5	31	5 in H x 6 in W x 3.3 in D	*127 mm H x 152 mm W x 84 mm D*	10# 4.5Kg	CAB-8
RL-01203	12	4.2	41	5 in H x 6 in W x 3.9 in D	*127 mm H x 152 mm W x 99 mm D*	18# 8.2Kg	CAB-8
RL-01801	18	0.8	36	5.3 in H x 6 in W x 3.2 in D	*135 mm H x 152 mm W x 81 mm D*	9# 4.1Kg	CAB-8
RL-01802	18	1.5	43	5.3 in H x 6 in W x 3.5 in D	*135 mm H x 152 mm W x 89 mm D*	12# 5.4Kg	CAB-8
RL-01803	18	2.5	43	6.1 in H x 8.1 in W x 4 in D	*155 mm H x 206 mm W x 102 mm D*	16# 7.3Kg	CAB-13V
RL-02501	25	0.5	48	5.8 in H x 7.2 in W x 3.5 in D	*147 mm H x 183 mm W x 89 mm D*	11# 5Kg	CAB-13V
RL-02502	25	1.2	52	5.8 in H x 7.2 in W x 3.5 in D	*147 mm H x 183 mm W x 89 mm D*	14# 6.4Kg	CAB-13V
RL-02503	25	1.8	61	5.8 in H x 7.2 in W x 4.3 in D	*147 mm H x 183 mm W x 109 mm D*	20# 9.1Kg	CAB-13V
RL-03501	35	0.4	49	5.8 in H x 7.2 in W x 4 in D	*147 mm H x 183 mm W x 102 mm D*	14# 6.4Kg	CAB-13V
RL-03502	35	0.8	54	5.8 in H x 7.2 in W x 4 in D	*147 mm H x 183 mm W x 102 mm D*	16# 7.3Kg	CAB-13V
RL-03503	35	1.2	54	7.4 in H x 9 in W x 4.7 in D	*188 mm H x 229 mm W x 119 mm D*	30# 13.6Kg	CAB-13V
RL-04501	45	0.3	54	7.4 in H x 9 in W x 4.7 in D	*188 mm H x 229 mm W x 119 mm D*	23# 10.4Kg	CAB-13V
RL-04502	45	0.7	62	7.4 in H x 9 in W x 4.7 in D	*188 mm H x 229 mm W x 119 mm D*	28# 12.7Kg	CAB-13V
RL-04503	45	1.2	65	7.3 in H x 9 in W x 5.3 in D	*185 mm H x 229 mm W x 135 mm D*	39# 17.7Kg	CAB-13V
RL-05501	55	0.25	64	7.3 in H x 9 in W x 5.3 in D	*185 mm H x 229 mm W x 135 mm D*	24# 10.9Kg	CAB-13V
RL-05502	55	0.5	67	7 in H x 9 in W x 5.3 in D	*178 mm H x 229 mm W x 135 mm D*	27# 12.2Kg	CAB-13V
RL-05503	55	0.85	71	7 in H x 9 in W x 6 in D	*178 mm H x 229 mm W x 152 mm D*	41# 18.6Kg	CAB-13V
RL-08001	80	0.2	82	7.2 in H x 9 in W x 6.3 in D	*183 mm H x 229 mm W x 160 mm D*	25# 11.3Kg	CAB-13V
RL-08002	80	0.4	86	7.2 in H x 9 in W x 6.5 in D	*183 mm H x 229 mm W x 165 mm D*	33# 15Kg	CAB-13V
RL-08003	80	0.7	96	8.5 in H x 10.8 in W x 6.8 in D	*216 mm H x 274 mm W x 173 mm D*	61# 27.7Kg	CAB-13V
RL-10001	100	0.15	94	7.3 in H x 9 in W x 6.5 in D	*185 mm H x 229 mm W x 165 mm D*	29# 13.2Kg	CAB-13V
RL-10002	100	0.3	84	7.3 in H x 9 in W x 6.8 in D	*185 mm H x 229 mm W x 173 mm D*	37# 16.8Kg	CAB-13V
RL-10003	100	0.45	108	8.25 in H x 10.8 in W x 6.16 in D	*210 mm H x 274 mm W x 156 mm D*	74# 33.6Kg	CAB-13V

Specifications subject to change without notice

MTE RL Reactors can be supplied in a variey of standard enclosures or open frame type to enable you to mount them in your sytem in the most efficient manner

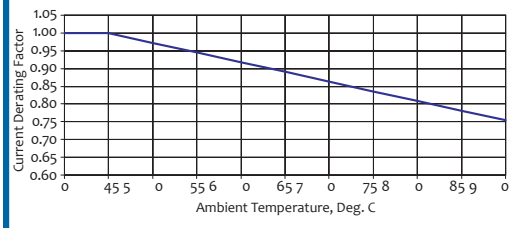
RL-10012



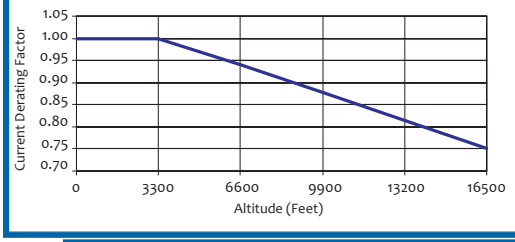
RL-50003

INTERTEK ISO 9001:2000

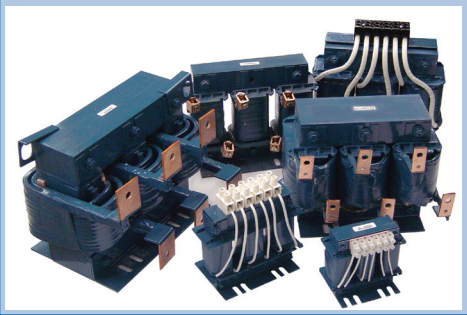
Reactor Temperature Derating Curve



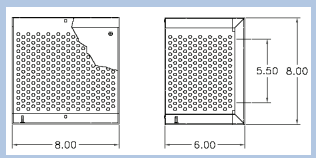
Altitude Derating Curve



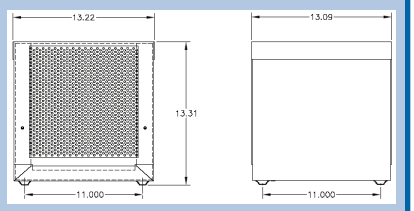
MTE RL Reactors connection types and terminals vary by model and rating



CAB-8 - 7# 3.2kg



CAB-13V - 18# 8.2kg



THE GLOBAL POWER QUALITY RESOURCE

MTE Corporation - Menomonee Falls, WI - 1-800-455-4MTE - www.mtecorp.com

Selection Table RL Line/Load Reactor Technical Data ... *Continued*

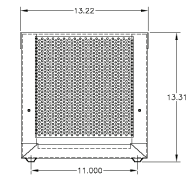
Open Part	amps	Inductance mH	Watts	Size inches	*Size mm*	Open Weight	Cabinet
RL-13001	130	0.1	108	7 in H x 9 in W x 4.66 in D	*178 mm H x 229 mm W x 118 mm D*	29# 13.2Kg	CAB-13V
RL-13002	130	0.2	180	7.2 in H x 9 in W x 6.8 in D	*183 mm H x 229 mm W x 173 mm D*	43# 19.5Kg	CAB-13V
RL-13003	130	0.3	128	8.5 in H x 11 in W x 6.16 in D	*216 mm H x 279 mm W x 156 mm D*	64# 29Kg	CAB-13V
RL-16001	160	0.075	116	7.2 in H x 9 in W x 6.8 in D	*183 mm H x 229 mm W x 173 mm D*	41# 18.6Kg	CAB-13V
RL-16002	160	0.15	149	8.3 in H x 10.8 in W x 6 in D	*211 mm H x 274 mm W x 152 mm D*	50# 22.7Kg	CAB-13V
RL-16003	160	0.23	138	8.5 in H x 11.5 in W x 9 in D	*216 mm H x 292 mm W x 229 mm D*	67# 30.4Kg	CAB-13V
RL-20001B14	200	0.055	124	7.5 in H x 9 in W x 7.3 in D	*191 mm H x 229 mm W x 185 mm D*	38# 17.2Kg	CAB-13V
RL-20002B14	200	0.11	168	7.5 in H x 9 in W x 8.3 in D	*191 mm H x 229 mm W x 211 mm D*	54# 24.5Kg	CAB-13V
RL-20003B14	200	0.185	146	8.3 in H x 10.8 in W x 10 in D	*211 mm H x 274 mm W x 254 mm D*	100# 45.4Kg	CAB-13V
RL-25001B14	250	0.045	154	7.5 in H x 9 in W x 9 in D	*191 mm H x 229 mm W x 229 mm D*	47# 21.3Kg	CAB-13V
RL-25002B14	250	0.09	231	8.5 in H x 10.8 in W x 9 in D	*216 mm H x 274 mm W x 229 mm D*	80# 36.3Kg	CAB-17V
RL-25003B14	250	0.15	219	11.2 in H x 14.4 in W x 10.3 in D	*284 mm H x 366 mm W x 262 mm D*	125# 56.7Kg	CAB-17V
RL-32001B14	320	0.04	224	9 in H x 10.8 in W x 8.3 in D	*229 mm H x 274 mm W x 211 mm D*	80# 36.3Kg	CAB-17V
RL-32002B14	320	0.075	264	9 in H x 10.8 in W x 10 in D	*229 mm H x 274 mm W x 254 mm D*	102# 46.3Kg	CAB-17V
RL-32003B14	320	0.125	351	11.25 in H x 14.4 in W x 10.5 in D	*286 mm H x 366 mm W x 267 mm D*	160# 72.6Kg	CAB-17V
RL-40001B14	400	0.03	231	10 in H x 10.8 in W x 10 in D	*254 mm H x 274 mm W x 254 mm D*	84# 38.1Kg	CAB-17V
RL-40002B14	400	0.06	333	11.25 in H x 15 in W x 11.5 in D	*286 mm H x 381 mm W x 292 mm D*	118# 53.5Kg	CAB-17V
RL-40003B14	400	0.105	293	11.25 in H x 14.4 in W x 12.5 in D	*286 mm H x 366 mm W x 318 mm D*	149# 67.6Kg	CAB-17V
RL-50001B14	500	0.025	266	9 in H x 10.8 in W x 10.5 in D	*229 mm H x 274 mm W x 267 mm D*	93# 42.2Kg	CAB-17V
RL-50002	500	0.05	340	11.5 in H x 14.4 in W x 11.5 in D	*292 mm H x 366 mm W x 292 mm D*	118# 53.5Kg	CAB-26C
RL-50003	500	0.085	422	11.5 in H x 14.4 in W x 13.3 in D	*292 mm H x 366 mm W x 338 mm D*	210# 95.3Kg	CAB-26C
RL-60001	600	0.02	307	11.5 in H x 14.4 in W x 10 in D	*292 mm H x 366 mm W x 254 mm D*	120# 54.4Kg	CAB-26C
RL-60002	600	0.04	414	11.25 in H x 14.4 in W x 12 in D	*286 mm H x 366 mm W x 305 mm D*	175# 79.4Kg	CAB-26C
RL-60003	600	0.065	406	11.25 in H x 14.4 in W x 15 in D	*286 mm H x 366 mm W x 381 mm D*	270# 122.5Kg	CAB-26C
RL-75001	750	0.015	427	11.5 in H x 14.4 in W x 11 in D	*292 mm H x 366 mm W x 279 mm D*	140# 63.5Kg	CAB-26C
RL-75002	750	0.029	630	11.5 in H x 14.4 in W x 12.5 in D	*292 mm H x 366 mm W x 318 mm D*	190# 86.2Kg	CAB-26C
RL-75003	750	0.048	552	14.5 in H x 14.4 in W x 14 in D	*368 mm H x 366 mm W x 356 mm D*	265# 120.2Kg	CAB-26C
RL-85001B14	850	0.015	798	15.5 in H x 17.8 in W x 14.5 in D	*394 mm H x 452 mm W x 368 mm D*	195# 88.5Kg	CAB-26C
RL-85002B14	850	0.027	930	15.5 in H x 17.8 in W x 15.5 in D	*394 mm H x 452 mm W x 394 mm D*	215# 97.5Kg	CAB-26C
RL-85003B14	850	0.042	1133	15.5 in H x 17.8 in W x 17.5 in D	*394 mm H x 452 mm W x 445 mm D*	315# 142.9Kg	CAB-26D
RL-90001B14	900	0.013	860	16.8 in H x 17.8 in W x 13 in D	*427 mm H x 452 mm W x 330 mm D*	200# 90.7Kg	CAB-26D
RL-90002B14	900	0.025	1020	15.5 in H x 17.8 in W x 15.5 in D	*394 mm H x 452 mm W x 394 mm D*	215# 97.5Kg	CAB-26D
RL-90003B14	900	0.04	1365	15.8 in H x 17.8 in W x 17.1 in D	*401 mm H x 452 mm W x 434 mm D*	315# 142.9Kg	CAB-26D
RL-100001B14	1000	0.011	810	14.5 in H x 17.8 in W x 12.7 in D	*368 mm H x 452 mm W x 323 mm D*	144# 65.3Kg	CAB-26D
RL-100002B14	1000	0.022	1080	15.5 in H x 17.8 in W x 15.5 in D	*394 mm H x 452 mm W x 394 mm D*	215# 97.5Kg	CAB-26D
RL-100003B14	1000	0.038	1250	15.8 in H x 17.8 in W x 17.5 in D	*401 mm H x 452 mm W x 445 mm D*	315# 142.9Kg	CAB-26D
RL-120001B14	1200	0.009	870	15.5 in H x 17.8 in W x 14.5 in D	*394 mm H x 452 mm W x 368 mm D*	195# 88.5Kg	CAB-26D
RL-120002B14	1200	0.019	1270	15.5 in H x 17.8 in W x 17.8 in D	*394 mm H x 452 mm W x 452 mm D*	275# 124.7Kg	CAB-26D
RL-120003B14	1200	0.03	1530	15.4 in H x 17.4 in W x 18.3 in D	*391 mm H x 442 mm W x 465 mm D*	390# 176.9Kg	CAB-26D
RL-140001	1400	0.008	1235	17 in H x 22 in W x 22 in D	*432 mm H x 559 mm W x 559 mm D*	500# 226.8Kg	CAB-42C
RL-140002	1400	0.016	1523	17 in H x 19 in W x 19 in D	*432 mm H x 483 mm W x 483 mm D*	525# 238.1Kg	CAB-42C
RL-140003	1400	0.027	1680	17 in H x 22 in W x 22 in D	*432 mm H x 559 mm W x 559 mm D*	850# 385.6Kg	CAB-42C
RL-150001	1500	0.008	1432	17 in H x 22 in W x 22 in D	*432 mm H x 559 mm W x 559 mm D*	635# 288Kg	CAB-42C
RL-150002	1500	0.015	1671	17 in H x 16.9 in W x 16 in D	*432 mm H x 429 mm W x 406 mm D*	675# 306.2Kg	CAB-42C
RL-150003	1500	0.025	1815	17 in H x 22 in W x 22 in D	*432 mm H x 559 mm W x 559 mm D*	900# 408.2Kg	CAB-42C

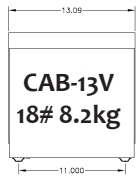
PRODUCT SELECTION: See MTE RL Selection Brochure or visit the MTE website at www.mtecorp.com and select the handy >> Reactor Click Find << for complete product selection & CAD files.

TERMINALS: Terminals are standard and save installation cost by minimizing panel space. Finger-proof (IP20) terminals are provided through 45 amps. Solid copper box lugs are provided above 45 amps to 160 amps. Copper tab type B14 or B1 flag terminals are used beyond 160 amps (see photo above).

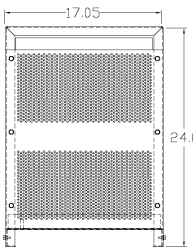
INSTALLATION OPTIONS: MTE line/load reactors are available in a variety of enclosures. The NEMA 1 for general protection or the NEMA 3R for weather protection.

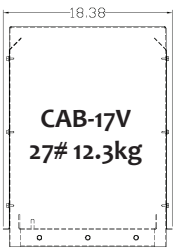
TRANSIENT PROTECTION OPTIONS: Various voltage rated MOV transient devices may be factory installed to reactor's output to offer the maximum over-voltage input drive security .





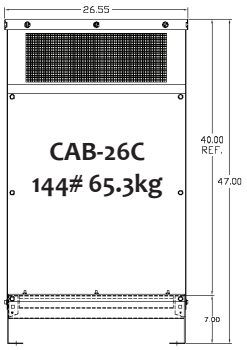
CAB-13V
18# 8.2kg



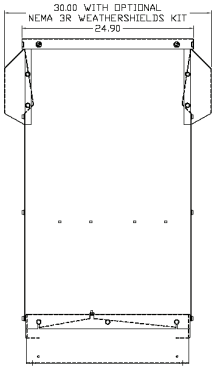


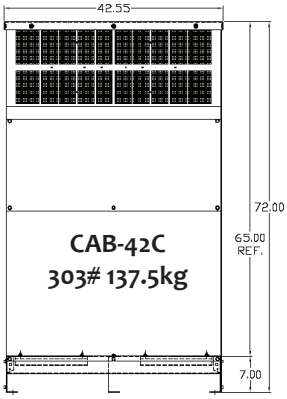
CAB-17V
27# 12.3kg

Note CAB-26D 72" H x 26.5"W x 24.9"D
CAB- 26D weight is 220# 99.8kg

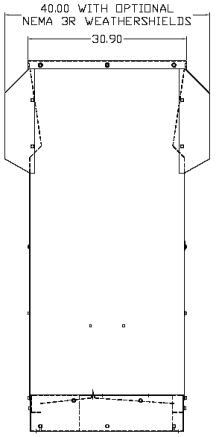


CAB-26C
144# 65.3kg



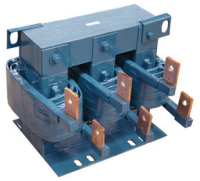


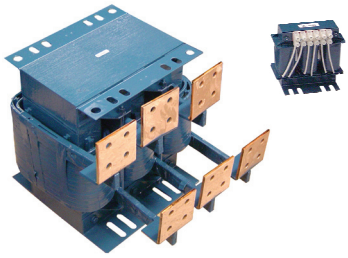
CAB-42C
303# 137.5kg



Product Specifications - RL Three Phase Reactors

Refer to the RL Line /Load Reactor User Manual for Detailed Specifications





Standard impedance values by calculation:	1.5%, 2, 3%, 4%, 5% available
Impedance basis	Reactor rated current, line voltage, frequency and inductance
Service Factor *(continuous)*	***Note: Select reactor based on rated current only***
Reactors rated 1 to 750 Amps	150% of rating
Reactors rated above 750 Amps	125% of rated minimum
Overload rating	200% of rated for 30 minutes
	300% of rated for 1 minute
Maximum system voltage	600 Volts (units with terminal blocks)
	690 Volts (units with box lugs or tab terminals)
Maximum switching frequency	20 KHz
Insulation system	Class N (**200°C** 392°F)
Temperature rise (*open or enclosed reactors*)	**135°C** 275°F (maximum)
Ambient temperature (*open or enclosed reactors*)	**45°C** 113°F (Full rated)
Altitude (*maximum*)	1000 meters
Fundamental frequency (*Line or Load*)	50/60 Hz
Approvals:	CE, UL-508, CSA C22.2
Inductance curve (*typical*)	100% at 100% current
	100% at 150% current
	50% at 350% current (minimum)
Inductance tolerance	+/- 10%
Impregnation:	High Bond Strength "Solvent-Less" Epoxy, 200° C
	UL94HB recognized
Dielectric Strength	3000 volts rms (4243 volts peak)
dV/dT Protection	Meets NEMA MG-1, part 31 (same as inverter duty motors)
AGENCY APPROVALS:	
UL-508	File E180243 Component Listed (1 amp – 2400 amps)
UL-508	File E180243 **UL Listed** NEMA 1 units (1 amp – 2400 amps)
Note: Short Circuit rating not required under Exception No.1 of UL508A SB4.2.1 effective 4/25/06	
CSA C22.2	File LR29753-13 CSA Certified (1 amp – 2400 amps)
Class N, 200° C	File E66214, Type 200-18, UL Recognized Insulation System
CE	Marked
MATERIAL:	
Core Steel:	Electrical grade high frequency silicon steel
Windings:	High dielectric withstand solid copper conductor (220° C)
Enclosures:	Sheet steel per UL and CSA requirements. Painted ANSI-61 Grey
Brackets:	ASTM structural steel or structural aluminum
Sheet Insulation:	DuPont Nomex 410 (220° C)
Epoxy:	Ripley Resin Type 468-2 (220° C)
CONSTRUCTION:	
CORE:	Electrical grade silicon steel magnetic laminations.
WINDINGS:	3000 volts rms dielectric strength (coil-to-coil & coil-to-core).
ASSEMBLY:	Windings are assembled onto EI laminations, secured in place & epoxy impregnated for minimum noise & maximum structural rigidity.
COLOR:	Royal Blue
TESTING:	Inductance, Hi-Pot 3000 Volts rms (5656 volts peak)

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